PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 08/857,585 Confirmation No.: 4360

In re Application of:

Fumio ABE et al. Group Art Unit: 1764

Filed: May 16, 1997 Examiner: Hien Thi Tran

For: HEATER AND CATALYTIC CONVERTER

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants request reconsideration of the rejections in the Office Action mailed April 6, 2004 in light of the following remarks.

Claim 15 was rejected under the first paragraph of 35 USC 112 as allegedly not described in the application. The Examiner stated that the term "is not poisoned by water" is nowhere disclosed in the original specification. Applicants respectfully submit that the term is well and properly supported in the application as filed and direct the Examiner's attention to page 23, lines 5 to 7.

Applicants respectfully submit that the specification as filed supports claim 15. If, after considering applicants' arguments, the Examiner believes that other language is more appropriate, she is asked to contact the undersigned.

The rejection of claims 3, 5, 6, 12, 14 to 16, 18, 20, and 21 under 35 USC 103 as unpatentable over the translation of Hei '247 in view of Eberly, Jr. et al. '448 and Swaroop et al. '694 is respectfully traversed.

Arguments in support of the patentability of the claims over the art are presented in the Request for Reconsideration filed November 24, 2003 and in the Amendment filed January 22, 2004. Applicants continue to rely upon those remarks and the Examiner is directed thereto.

As indicated in those previous arguments, applicants respectfully submit that the working and comparative examples in the specification and in the Declaration Under 37 CFR 1.132 of joint inventor Naomi Noda prove the patentability of the claimed subject matter. The Examiner stated in the second paragraph of the Response to Arguments section of the Office Action beginning on page 8 that the Table on page 3 Ms. Noda's Declaration, copy

enclosed, is not commensurate in scope with the range of the instant claims. Applicants said previously and say now that the working and comparative examples in the application and in the declaration are representative of claim scope. It is noted that the Examiner has been requested to offer any comments with respect to the extent of the showing in at least the Noda declaration.

Moreover, the alkali content discussed in Swaroop et al. '694 is the alkali content to be contained in the starting-material zeolite used to form a Cr-substituted zeolite. The reference is silent regarding any direct relationship between the alkali metal content of the zeolite and thermal stability of an H^+ type zeolite. Eberly, Jr. et al. '448 shows some of its zeolites with a substantial amount of alkali metal; see, for instance, Example 5, which mentions "less than 1% of potassium."

Swaroop et al. '694 at column 5, lines 21 to 28 teaches merely that its Cr-substituted zeolite can retain about 50% of BET at 1000°C. The patent has no discussion of the criticality of having an Si/Al ratio of at least 48 to have good zeolite BET retention. Indeed, column 3, lines 28 to 37 of Swaroop et al. '694 shows that for purposes of that invention the preferred ratio ranges from 3 to

20. The references in combination do not teach or suggest the invention as claimed.

The rejection should be withdrawn.

The rejection of claims 3, 5, 6, 12 to 16 and 18 under 35 USC 103 as unpatentable over the translation of Hei '247 in view of Inoue et al. '236 and Swaroop et al. '694 is also respectfully traversed for reasons previously presented in the Request for Reconsideration filed November 24, 2003, the Amendment filed January 22, 2004, and the comments above regarding the rejection of the claims based upon a combination of Hei '247, Eberly, Jr. et al. '488 and Swaroop et al. '694.

In addition, the primary reference is directed to a catalyst having a carrier and a catalyst layer formed of a first catalyst layer made of a porous body layer with zeolite as the major component and a second catalyst layer formed on the first catalyst layer and made of a coated alumina or the like layer, and a noble metal carried thereon. The translation at page 5, lines 10 to 14 indicates that the carrier could be monolithic carrier, or granular-like pellets.

Reconsideration of the application is earnestly solicited.

Respectfully submitted,

PARKHURST & WENDEL, L.L.P.

August 6, 2004
Date

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Enclosure:
Page 3 of Noda 37 CFR 1.32 Declaration

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Inoue et al. '236, in contrast, proposes using a specific metal for ion exchange with the alumina in an aluminosilicate to stabilize copper-containing crystalline aluminosilicate; see Table 5 of the reference. Inoue et al. '236 teach that a low NaO_2 content does not guarantee an improvement in heat stability. Compare the heat resistance values of Comparative Catalyst 5 (NaO_2 content of 0.009% by weight) with Cu-TG45 (NaO_2 content of 0.015% by weight). The person of ordinary skill in the art from a joint consideration of these references would not be directed to the present invention having an adsorbent with good heat stability.

The rejection should be withdrawn.

Table: Result of Experiment

Zeolite	Si/Al molar ratio	Alkali content (wt.%)	BET Specific Surface Area (m^2/g)			
			Prior to heat treatment	After heat treatment		
				At 900°C	At 1,000°C	At 1,100°C
Zeolite A	14	< 0.1	360	120	30	<1
Zeolite B	48	< 0.1	410	400	300	30
Zeolite C	130	< 0.1	415	410	300	285
Zeolite D	215	< 0.1	405	405	360	320
Zeolite G	200	0.85	350	30	5	< 1
Zeolite H	200	0.16	350	195	40	5
Zeolite I	200	0.08	350	350	350	250

DISCUSSION

As is clear from the data reported above, a zeolite can show a good retention of BET Specific Surface Area, even at an elevated temperature such as 1,000 °C or more, if the zeolite alkali content is 0.1 or less, provided that the Si/Al molar ratio is at least 48.

This property is considered quite useful because an exhaust gas often reaches a temperature of 1,000 °C or more under unfavorable driving conditions.